

The patriarchs in Washington, then, were talking of a promising novice in New York, named Frank M. Chapman. In Washington, a high school student, C. W. Richmond, by name, was making wistful calls at the Smithsonian and the Agricultural Department, seeking precious light.

Leaving Washington to enter Cornell University, in 1890, my life there promised to be as tranquil as the trill of a field sparrow on a summer day.

But at Ithaca, a professor's son, whose initials were L. A. F., asked me to give him confidential instruction in skinning birds and obtaining bird books, because his father did not desire him to be a naturalist! So runs the world away!

ARDMORE, PA.

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## A MENSURAL STUDY OF A COLLECTION OF *GRUS* *CANADENSIS* FROM IOWA AND NEBRASKA

BY PHILIP A. DU MONT

In view of the fact that the measurements, as recorded for *Grus canadensis canadensis* (Linnaeus) and *Grus canadensis tabida* (Peters) by most authors, show a rather marked degree of differentiation, it seems advisable to place on record the results of a study of twenty-eight specimens contained in the collection of the Museum of Natural History, University of Iowa. I believe these measurements indicate more nearly the slight differences between these forms, as found in specimens taken through the Missouri River Valley region during migration. This intergradation, therefore, confirms the opinion of Oberholser<sup>1</sup> and Hartert<sup>2</sup>, who accorded them subspecific rank.

Grinnell<sup>3</sup> took a series of measurements of museum material totaling 107 specimens almost impartially divided between *canadensis* and *tabida*. The outstanding result of this scrutiny was the complete intergradation of the two races. He found that a plot of wing dimensions showed less division than did that of the tarsus.

In the determination of this material at hand, I have used the factors of wing length and extent of exposed culmen, and, at least for this area, these seem to suffice as subspecific characters.

While the measurements of wing, exposed culmen, culmen from nostril, depth of culmen at base, and length of middle toe (without

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<sup>1</sup>*Auk*, XXXVIII, 1921, pp. 80-82.

<sup>2</sup>*Vog. Pal. Faun.* 3, 1921, p. 1818.

<sup>3</sup>*Univ. Calif. Bull. Dept. Sci.*, Vol. 15, 1925, pp. 318-320.

*Grus canadensis canadensis* (Linnaeus)

Museum No.	Locality	Date	Sex	Wing	Exp. Cul.	From Nostril	Depth at Base	Tarsus	Bare Tibia	Middle Toe	Tail
6259	Gothenburg, Nebr.	November 29, —	♂	17.60	3.95	2.75	.98	7.00	2.75	2.82	6.25
5206	Whiting, Iowa	April 18, 1886	♂	19.00	3.70	2.40	.93	7.75	2.90	2.96	6.90
6256	Holly Springs, Iowa	April 8, 1887	♂	19.25	4.10	2.90	.98	7.15	2.80	2.85	6.50
5222	Holly Springs, Iowa	April 18, 1887	♂	19.50	4.24	2.88	1.01	8.75	3.20	3.28	6.40
5215	Holly Springs, Iowa	April 8, 1887	♂	19.70	3.92	2.78	.99	6.50	2.50	2.94	6.00
5201	Whiting, Iowa	April 9, —	♂	19.80	3.95	2.60	.93	8.00	3.40	3.20	7.20
5211	Holly Springs, Iowa	April 8, —	♂	19.90	4.38	2.95	.98	8.50	3.30	3.08	6.60
6260	Gothenburg, Nebr.	November 26, —	♂	20.00	4.04	2.65	1.02	8.75	2.90	2.84	7.00
6255	Sloan, Iowa	No date	♂	20.10	4.28	2.72	.98	9.00	4.00	3.38	6.75
6252	Whiting, Iowa	April 9, 1886	♂	20.20	4.00	2.61	.96	8.50	3.60	3.20	7.00
5223	Elm Creek, Nebr.	November 10, 1886	♂	20.25	4.20	2.88	.88	7.75	3.00	3.14	7.25
5364	Holly Springs, Iowa	April 8, 1887	♂	20.30	4.40	2.92	.99	8.75	3.70	3.26	7.00
5209	Sloan, Iowa	April 28, 1884	?	19.50	4.24	2.70	.97	8.25	3.70	3.10	6.10
5204	Sloan, Iowa	No date	[ ♀ ]	17.00	3.38	2.22	.87	7.00	2.90	2.65	5.50
6258	Holly Springs, Iowa	April 8, 1887	♀	17.70	3.74	2.15	.88	6.00	2.80	2.71	6.60
5212	Kearney, Nebr.	April 11, 1886	♀	18.00	3.58	2.50	.88	6.50	2.50	2.58	6.00
6251	Holly Springs, Iowa	April 11, 1887	♀	18.50	4.05	2.80	.95	8.00	3.50	3.25	6.80
5366	Gothenburg, Nebr.	November 29, —	♀	19.75	4.08	2.82	.97	8.25	3.60	3.09	6.90
5365	Whiting, Iowa	April 6, 1886	♀	19.80	4.04	2.72	1.01	8.25	4.10	3.30	6.50
5207	Plum Creek, Nebr.	November 10, 1885	♀	19.90	4.25	2.86	1.02	8.75	3.70	2.75	7.00
6257	Elm Creek, Nebr.	November 10, 1886	♀	20.25	4.30	2.95	.99	8.90	3.80	3.37	7.50
5221	Elm Creek, Nebr.	November 5, 1884	♀	20.40	4.27	3.02	1.00	8.25	4.00	3.38	7.00

*Grus canadensis tabida* (Peters)

Museum No.	Locality	Date	Sex	Wing	Exp. Cul.	From Nostril	Depth at Base	Tarsus	Bare Tibia	Middle Toe	Tail
5199	Holly Springs, Iowa	April 18, 1887	♂	20.40	4.78	3.32	1.08	9.25	3.80	3.38	6.70
5363	Whiting, Iowa	April 12, 1886	♂	20.70	4.92	3.26	1.04	8.50	3.70	3.34	7.00
5200	Woodbury Co., Iowa	March 14, 1891	♂	21.00	4.95	3.10	1.09	8.25	4.00	3.50	7.10
5224	Wolf Creek, Nebr.	April 4, —	♂	21.10	4.85	3.11	1.04	9.60	4.10	3.58	6.20
5225	No record	No date	[ ♂ ]	21.50	5.18	3.38	1.06	9.50	4.10	3.38	7.75
5202	Wood River, Nebr.	October 23, 1884	♀	20.25	4.75	3.19	1.03	8.60	3.80	3.28	6.60

<sup>1</sup>Died in captivity.

claw) proved to be tangible factors for determination between *G. c. canadensis* and *G. c. tabida* the measurements of tarsi, exposed portion of tibia, and length of tail so overlapped as to be of little value.

These specimens were secured for D. H. Talbot, of Sioux City, by his collectors at Holly Springs and Sloan, Woodbury County, and Whiting, Monona County, Iowa, during 1884-'86-'87; and at Kearney and Elm Creek, Buffalo County, Gothenburg, Dawson County, Plum Creek and Wolf Creek, Nebraska, during April and November 1884-'85-'86-'87.

It is impossible to say whether this material represents the approximate proportion of these two species as they formerly existed in migration through the Missouri River Valley, or whether a special effort was made by the Talbot collectors to secure a series of the Little Brown Crane.

The following ranges of measurements in inches for the two forms are based on the specimens as listed in the table below.

*Grus canadensis canadensis* (Linnaeus)

Twelve males. Wing (measured along the arc, with a tape, 17.60 to 20.30; exposed culmen, 3.70 to 4.40; depth of culmen at base, .93 to 1.02; bill from nostril, 2.40 to 2.95; tarsus, 6.50 to 9.00; exposed portion of tibia, 2.50 to 4.00; length of middle toe (without claw), 2.82 to 3.38; length of tail, 6.00 to 7.25.

Eight females. Wing, 17.70 to 20.40; exposed culmen, 3.58 to 4.30; depth of culmen at base, .88 to 1.02; bill from nostril, 2.15 to 3.02; tarsus, 6.00 to 8.90; exposed portion of tibia, 2.50 to 4.10; length of middle toe, 2.58 to 3.38; length of tail, 6.00 to 7.50.

*Grus canadensis tabida* (Peters)

Five males. Wing, 20.40 to 21.50; exposed culmen, 4.78 to 5.18; depth of culmen at base, 1.04 to 1.09; bill from nostril, 3.10 to 3.38; tarsus, 8.25 to 9.60; exposed portion of tibia, 3.70 to 4.10; length of middle toe, 3.34 to 3.58; length of tail, 6.20 to 7.75.

One female. Wing, 20.25; exposed culmen, 4.75; depth of culmen at base, 1.03; bill from nostril, 3.19; tarsus, 8.60; exposed portion of tibia, 3.80; length of middle toe, 3.28; length of tail, 6.60.

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